Section 6: PRELIMINARY EVALUATION OF MULTI-USE TRAIL CORRIDOR OPTIONS

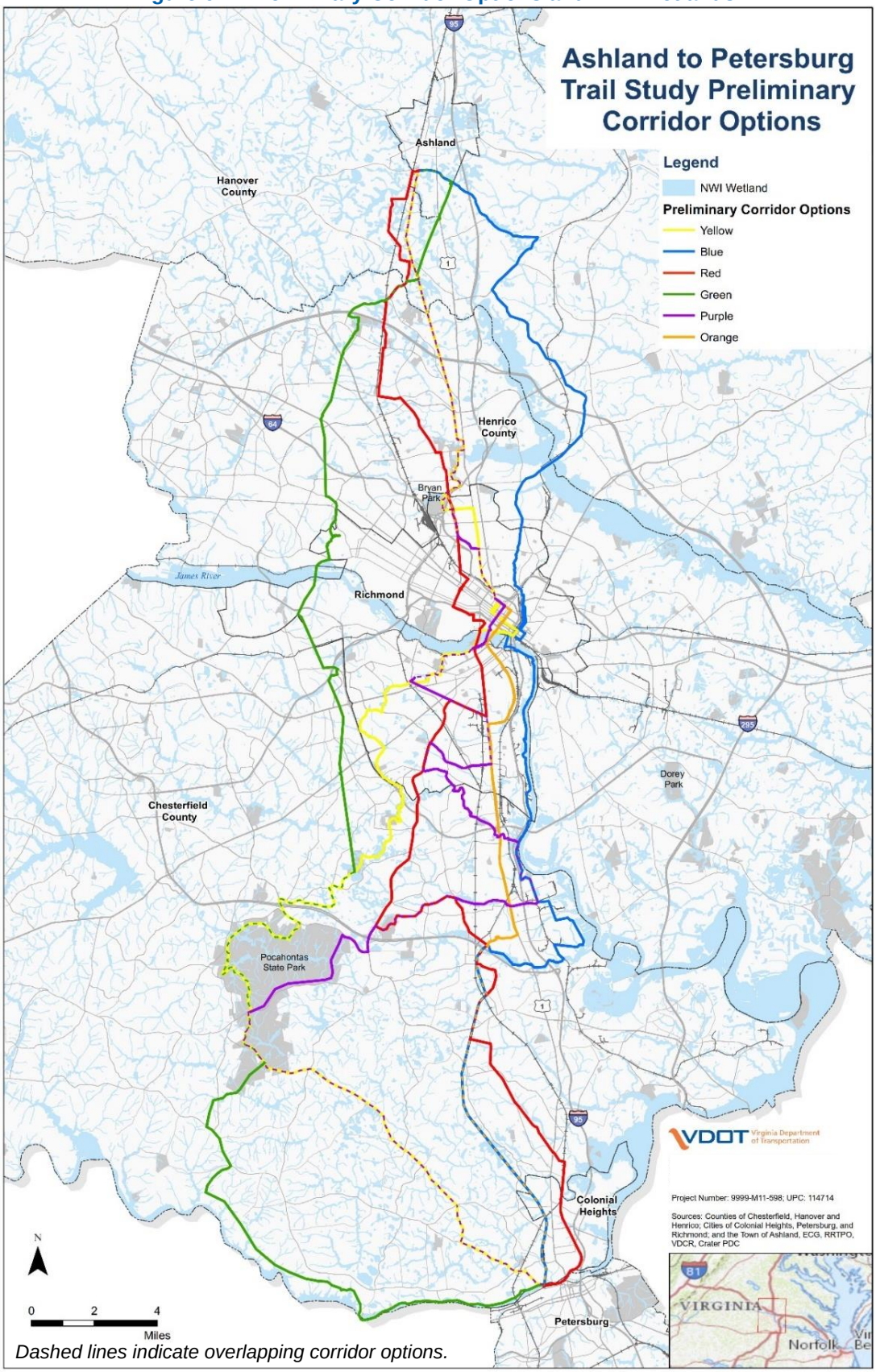
The intent of the preliminary evaluation was to identify those corridor options that meet the purpose and need while representing the least potentially environmentally damaging corridor option. The initial evaluation of these corridor options focused on environmental considerations, including potential impacts to wetlands and streams. All six preliminary corridor options evaluated in the preliminary evaluation were found to meet the project purpose and need; however, only the two (2) corridor options that represented the least potential impacts to streams and wetlands compared to the other corridor options were retained for detailed analysis. **Table 6-1** provides an overview of data used during the multi-use trail corridor options preliminary evaluation and subsequent results. **Figure 6-2** corresponds to Need Element 1: Safety and illustrates the identified PSAP top priority and priority corridors along the preliminary corridor options. Additionally, as part of the preliminary evaluation, when evaluating if the corridor options meet Need Element Number 1: Safety, a level of traffic stress facility meeting the purpose and need was assumed for implementation.

VDOT's PSAP has provided guidance on specific locations noted for safety improvements based on a detailed review of locations with a history of pedestrian incidents in Virginia along with addressing pedestrian crash risk through identifying priority corridors. Priority corridors segments resulted from the systemic analysis of crash history data and are identified segments that have recommended countermeasures. Top-priority corridors are priority pedestrian corridors that have detailed recommendations as part of the PSAP. **Figure 6-2** illustrates the identified PSAP top priority and priority corridors along the preliminary corridor options. Mapping of the individual preliminary corridor options are shown in **Figures 6-3** through **6-8** in their corresponding evaluation summary.


W Leigh St (Richmond)

Environmental considerations, including potential for impacts to wetlands and streams, were included as part of the preliminary evaluation. During the May 8th, 2019 EAWG meeting, the EAWG agreed on the multi-use trail corridor preliminary evaluation approach to use a 30-foot corridor for assessing potential constraints/impacts to wetlands and streams. Using the selected 30-foot corridor, on/off road typical sections (including a 10-foot trail, variable shoulders) and any potential impacts were captured. Wetland and stream Geographic Information Systems (GIS) data was obtained from the U.S. Fish and Wildlife Service's (USFWS) National Wetland Inventory (NWI) and U.S. Geological Survey's National Hydrography Dataset (NHD), respectively. Wetland acres and linear feet of stream impacts were measured within the agreed-upon 30-foot corridor along each corridor option; 15 feet on either side of the corridor option centerline. **Figure 6-1** displays the NWI wetlands along the preliminary corridor options. The corridor options that meet the purpose and need while representing the least potential impact to wetlands and streams were carried forward for detailed evaluation.

Figure 6-1. Preliminary Corridor Options and NWI Wetlands



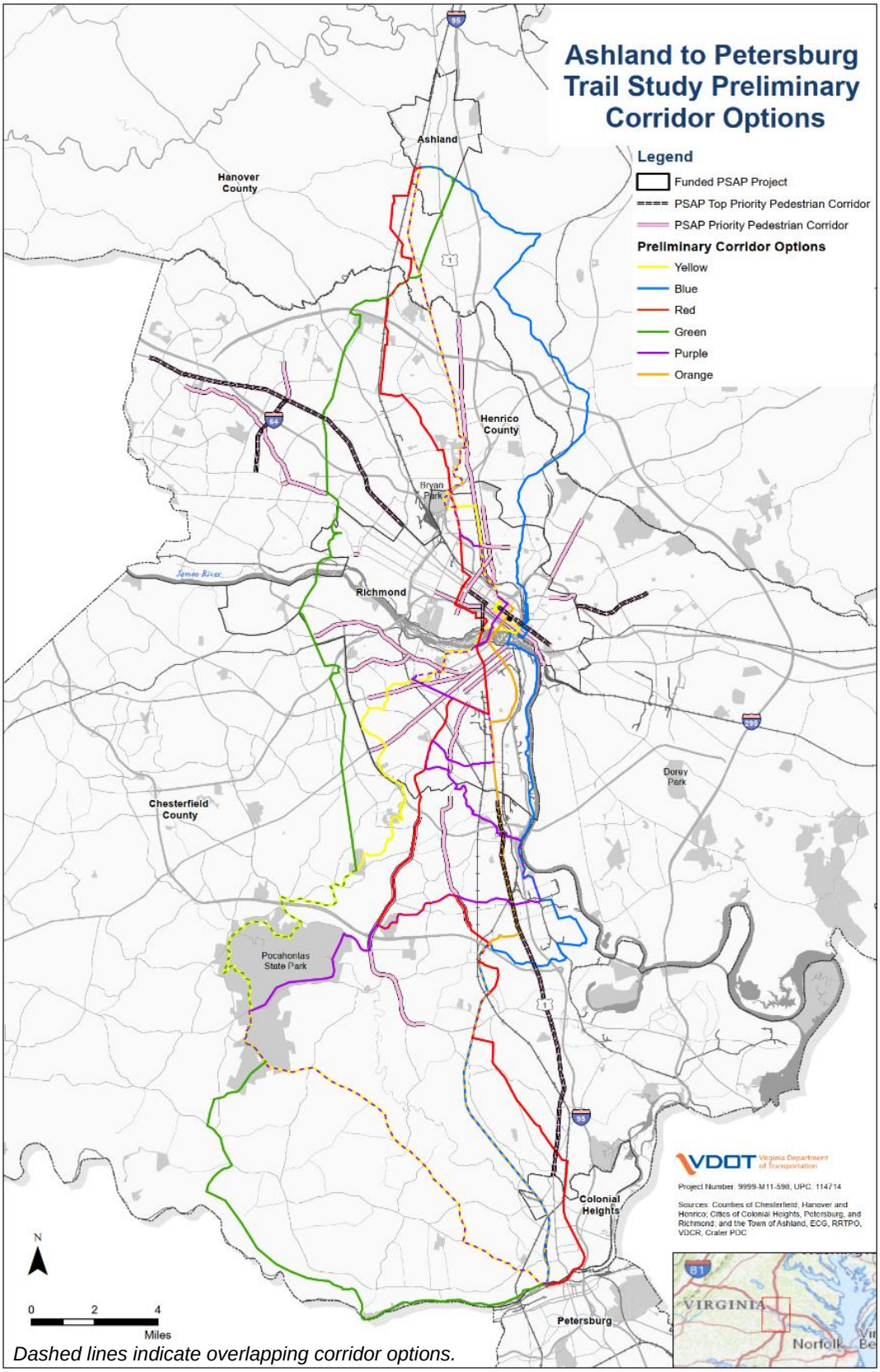
Dashed lines indicate overlapping corridor options.

Table 6-1. Preliminary Evaluation of Multi-Use Trail Corridor Options

Corridor Option			ORANGE	RED	YELLOW	GREEN	BLUE	PURPLE
Ability to Meet Purpose and Need	Need Element No. 1: Safety	Distance along PSAP Top Priority Corridor (miles):	4	0	0	0	0	0
		Distance along PSAP Priority Corridor (miles):	2	5	3	0	0	2.5
	Need Element No. 2: Connectivity	Destinations of Interest (w/i 0.5 miles):	17	18	21	7	13	17
	Need Element No. 3: Consistency	Approximate Distance Along Existing or Planned Active Transportation Facility (%):	82	88	92	75	84	85
Environmental Considerations*	Wetlands (acres):		9.6	8.0	16.6	14.9	16.0	21.1
	Streams (linear feet):		2,307	3,112	5,587	3,581	4,345	9,709
Retain?			**YES**	**YES**	**NO**	**NO**	**NO**	**NO**

**NWI wetlands numbers reflect all Cowardin classifications except Riverine. Shaded cells indicate least potential impact to associated environmental resource.*

Figure 6-2. Preliminary Corridor Options and PSAP Priority Corridors



Dashed lines indicate overlapping corridor options.

Ability to Meet Purpose and Need

Need Element Number 1: Safety

The Orange Corridor Option was the only option that included a portion of its corridor along one of the 63 top priority corridors identified in VDOT's PSAP, U.S. Route 1. The Orange Corridor Option is along the top priority corridor on U.S. Route 1 for four miles, of the top priority corridor's 12 miles, from the approximate city limits of Richmond to the intersection of Galena Avenue. The top priority pedestrian safety corridors are corridors where specific counter measures for improved pedestrian infrastructure have been identified (such as pedestrian signals, raised medians islands, high visibility crosswalks, or grade-separation) and where monitoring of progress and implementation of counter measures have been recommended. The Orange Corridor Option also included two miles of identified priority corridors identified by VDOT's PSAP along Brook Road in the City of Richmond.

Need Element Number 2: Connectivity

The Orange Corridor Option offered connections to 17 destinations of interest identified by the public and STAG within a half-mile of the corridor. **Table 4-1** in **Section 4: Corridor Options Development** represents the destinations of interest within a half-mile along the corridor options.

Need Element Number 3: Consistency

The Orange Corridor Option had approximately 82 percent (34 miles) of its corridor length (approximately 41 miles) comprised of existing or planned active transportation facilities. Local and regional planning documents and GIS data obtained throughout the study process from STAG members was reviewed to evaluate corridor length on existing or planned active transportation facilities. State, regional, and local active transportation planning documents in which existing and proposed bicycle and pedestrian facilities were reviewed and referenced from can be found in **Table 2-7** in **Section 2: Study Purpose**.

Environmental Considerations

The Orange Corridor Option would potentially impact the least amount of streams, 2,307 linear feet, compared to the other corridor options and approximately 800 linear feet less than the Red Corridor Option, the corridor option with the next lowest potential impacts. The Orange Corridor Option would potentially impact 9.6 acres of wetlands, the second lowest estimated impacts to wetlands following the Red Corridor Option (an estimated 8.0 acres of wetlands). **Figure 6-1** displays the NWI wetlands along the preliminary corridor options.

Other Considerations

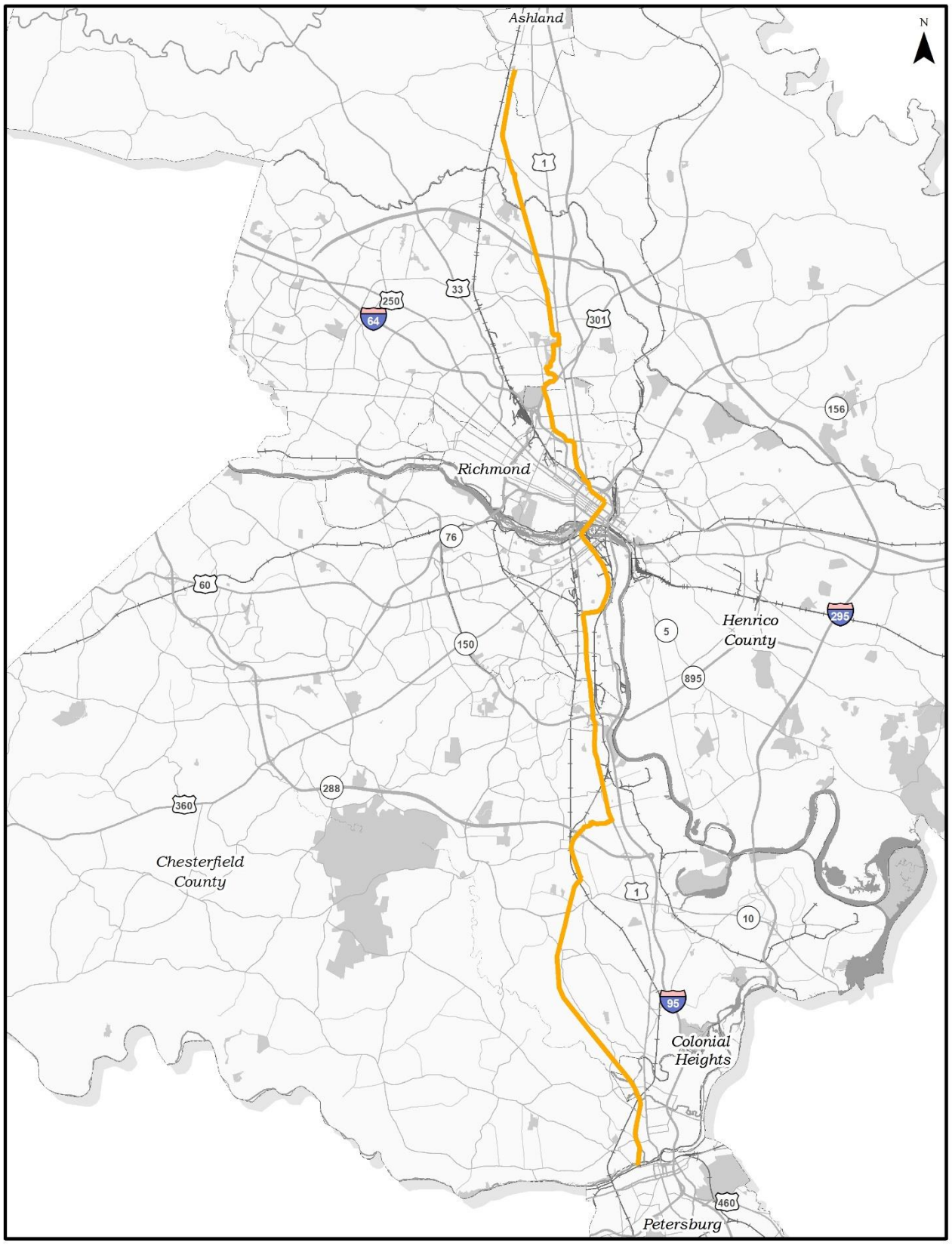
Upon STAG review of the preliminary corridor options, the Orange Corridor Option meets the following favorable considerations identified by the STAG: follows the portion of the Ashland Trolley Line Trail that the Town of Ashland favors, enters Henrico County through Bryan Park (favored by Henrico County), utilizes Route 1 through the City of Richmond and Chesterfield County (favored by PlanRVA, Chesterfield County and the City of Richmond), and follows the Chester Linear Extension rail-to-trail (favored by Chesterfield County). The Orange Corridor Option alignment along U.S. Route 1 is favored due to the incorporation of Chesterfield County's North Jefferson Davis Special Use Area planned route and its proximity to U.S. Route 1, where desired opportunities for growth and redevelopment, in addition to existing bicycle and pedestrian safety issues, have been identified. Chesterfield County supports the Orange Corridor Option following the Chester Linear Extension rail-to-trail. Additionally, Chesterfield County and FOLAR prefer the crossing of the Appomattox River adjacent to Campbell's Bridge for a bicycle and pedestrian bridge.

Retained or Not Retained for Detailed Evaluation

The Orange Corridor Option has the greatest portions of its alignment along VDOT's PSAP, would provide connectivity to the majority of the STAG and public identified destinations of interest within a half-mile, has the least potential for stream impacts, and would have limited impacts to wetlands. The potential wetland impacts are similar to the corridor option with the lowest potential impact. Any potential impacts may be avoided or minimized to the greatest extent possible in later stages of project development. Additionally, the Orange Corridor Option is the most direct route that intersects the fewest parcels compared to the other corridors and is anticipated to have a limited number of potential parcel impacts providing a cost-effective option. In addition to the Orange Corridor Option's inclusion based on revisions suggested by the STAG during April 24, 2019 STAG meeting, the Orange Corridor Option meets a majority of the favorable considerations identified by the STAG members. Therefore, the Orange Corridor Option is retained for detailed evaluation based on its ability to meet the purpose and need and provide the least potential impacts to environmental resources.

W Brookland Park Blvd (Richmond)

Figure 6-3. Orange Corridor Option



Red Corridor Option

Ability to Meet Purpose and Need

Need Element Number 1: Safety

The Red Corridor Option included approximately five miles of priority corridors identified by VDOT's PSAP. The five miles of priority corridors includes portions along Hopkins Road and Iron Bridge Road north of World War II Veterans Memorial Highway (VA-288) in Chesterfield County.

Additionally, as part of the preliminary evaluation, when evaluating the corridor option's ability to meet the Need Element Number 1: Safety, a level of traffic stress facility meeting the purpose and need was assumed for implementation.

Need Element Number 2: Connectivity

The Red Corridor Option offered connections to 18 destinations of interest identified by the public and STAG within a half-mile of the corridor. **Table 4-1** in **Section 4: Corridor Options Development** represents the destinations of interest within a half-mile along the corridor options.

Need Element Number 3: Consistency

The Red Corridor Option had approximately 88 percent (44 miles) of its corridor length (approximately 50 miles) comprised of existing or planned active transportation facilities. Local and regional planning documents and GIS data obtained throughout the study process from STAG members was reviewed to evaluate corridor length on existing or planned active transportation facilities. State, regional, and local active transportation planning documents in which existing and proposed bicycle and pedestrian facilities were reviewed and referenced from can be found in **Table 2-7** in **Section 2: Study Purpose**.

Environmental Considerations

The Red Corridor Option would potentially impact the least amount of wetlands, an estimated 8.0 acres, approximately 1.6 acres less than the Orange Corridor Option (9.6 acres). The Red Corridor Option would potentially impact an estimated 3,112 linear feet of streams, the second lowest estimated impacts to streams following the Orange Corridor Option (an estimated 2,307 linear feet of streams).

Other Considerations

Upon STAG review of the preliminary corridor options, the Red Corridor Option is generally favored by the STAG members. The Red Corridor Option's entrance into Henrico County through Bryan Park is favored by Henrico County. Additionally, FOLAR supports the use of the abandoned railroad piers that would connect the City of Colonial Heights to Pocahontas Island in the City of Petersburg. However, Henrico County is concerned that the Red Corridor Option may face right of way challenges, particularly in areas such as Woodman Road.

Retained or Not Retained for Detailed Evaluation

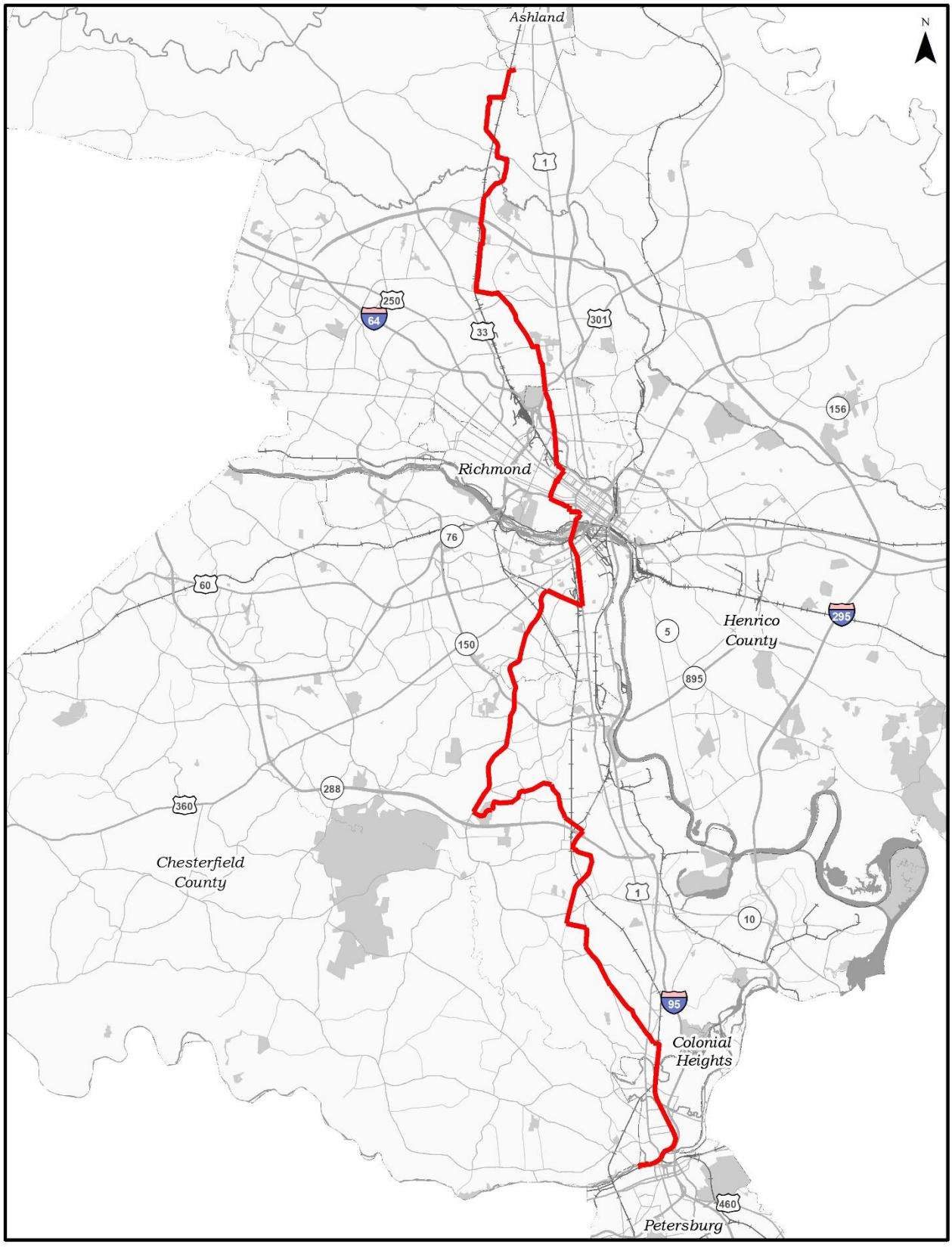
The Red Corridor Option has limited potential for impacts to wetlands and streams. The Red Corridor Option has the least potential for wetland impacts and has estimated stream impacts that are similar to the corridor option with the lowest potential impact to streams. Any potential impacts may be avoided or minimized to the greatest extent possible in later stages of project development.

Additionally, the Red Corridor Option has the next highest amount of its alignment along VDOT's PSAP and provides connectivity to the majority of the STAG and public identified destinations of interest within a half-mile. The Red Corridor Option is retained for detailed evaluation based on its ability to meet the purpose and need and provide the least potential impacts to environmental resources.


Spring St (Richmond)

Robert E. Lee Bridge

Figure 6-4. Red Corridor Option



Yellow Corridor Option

Ability to Meet Purpose and Need

Need Element Number 1: Safety

The Yellow Corridor Option included approximately three miles of priority corridors identified by VDOT's PSAP. The three miles of priority corridors includes portions along Brook Road in the City of Richmond. Additionally, as part of the preliminary evaluation, when evaluating the corridor option's ability to meet the Need Element Number 1: Safety, a level of traffic stress facility meeting the purpose and need was assumed for implementation.

Need Element Number 2: Connectivity

The Yellow Corridor Option offered connections to 21 destinations of interest identified by the public and STAG within a half-mile of the corridor. **Table 4-1** in **Section 4: Corridor Options Development** represents the destinations of interest within a half-mile along the corridor options.

Need Element Number 3: Consistency

The Yellow Corridor Option had approximately 92 percent (54 miles) of its corridor length (approximately 59 miles) comprised of existing or planned active transportation facilities. Local and regional planning documents and GIS data obtained throughout the study process from STAG members was reviewed to evaluate corridor length on existing or planned active transportation facilities. State, regional, and local active transportation planning documents in which existing and proposed bicycle and pedestrian facilities were reviewed and referenced from can be found in **Table 2-7** in **Section 2: Study Purpose**.

Environmental Considerations

The Yellow Corridor Option would potentially impact 16.6 acres of wetlands and 5,587 linear feet of streams, more than double the amount of potential wetland impacts from the Red Corridor Option (8.0 acres), the corridor option with the least potential wetland impacts, and more than double the amount of potential stream impacts from the Orange Corridor Option (2,307 linear feet), the corridor option with the least potential stream impacts.

Other Considerations

Upon STAG review of the preliminary corridor options, the Town of Ashland favors incorporation of the Ashland Trolley Line Trail and Henrico County favors the entrance into County through Bryan Park on the Yellow Corridor Option. Additionally, Chesterfield County and FOLAR support the use of the crossing of the Appomattox River adjacent to Campbell's Bridge for a bicycle and pedestrian bridge. However, Chesterfield County has concerns with adjacent property owners along the corridor option in southern Chesterfield and the City of Colonial Heights has concerns with the lack of adjacency and connection to the City of Colonial Heights with the Yellow Corridor Option.

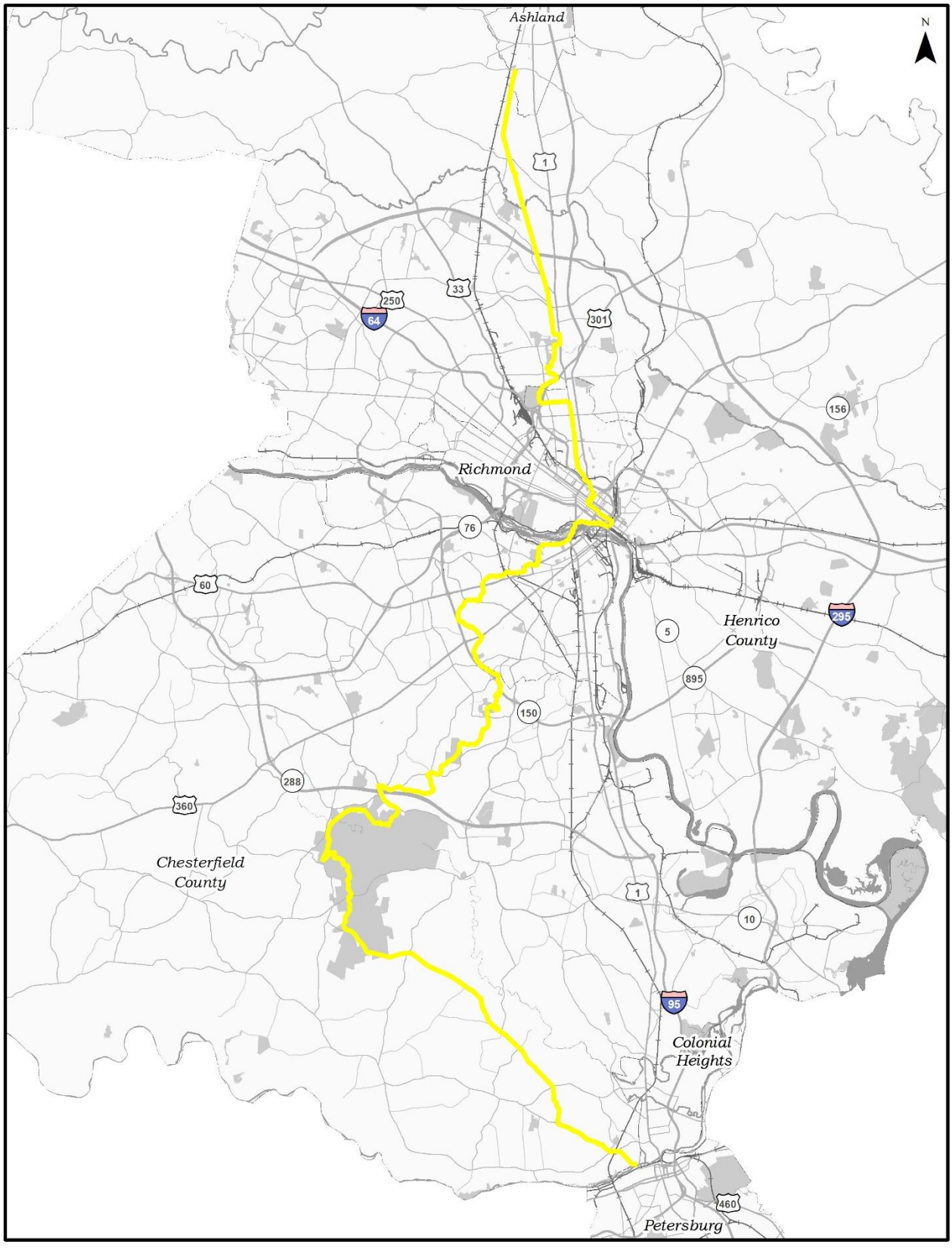
Retained or Not Retained for Detailed Evaluation

Although the Yellow Corridor Option addresses the overall needs, it represents one of the more impactful and longest options, which could contribute to a higher overall cost. Given the similarities between this corridor and the others while considering the cost and feasibility of implementation, more practicable and reasonable options are identified that have a lower potential for impacts to wetlands and streams, while providing more direct connections to destinations of interest. Therefore, the Yellow Corridor Option is not recommended to be retained for detailed evaluation.

Ashland Trolley Line Trail (Ashland)

Canal Walk (Richmond)

Figure 6-5. Yellow Corridor Option



Green Corridor Option

Ability to Meet Purpose and Need

Need Element Number 1: Safety

As part of the preliminary evaluation, a level of traffic stress facility meeting the purpose and need and the Need Element Number 1: Safety was assumed to be met for implementation by the six preliminary corridor options; however, it was identified that the Green Corridor Option would not address safety needs identified in VDOT's PSAP, as the option did not include any portions of priority corridors where primary areas of safety concern were identified.

Need Element Number 2: Connectivity

The Green Corridor Option offered connection to seven destinations of interest identified by the public and STAG within a half-mile of the corridor. **Table 4-1** in **Section 4: Corridor Options Development** represents the destinations of interest within a half-mile along the corridor options.

Need Element Number 3: Consistency

The Green Corridor Option had approximately 75 percent (45 miles) of its corridor length (approximately 60 miles) comprised of existing or planned active transportation facilities. Local and regional planning documents and GIS data obtained throughout the study process from STAG members was reviewed to evaluate corridor length on existing or planned active transportation facilities. State, regional, and local active transportation planning documents in which existing and proposed bicycle and pedestrian facilities were reviewed and referenced from can be found in **Table 2-7** in **Section 2: Study Purpose**.

Environmental Considerations

The Green Corridor Option would potentially impact 14.9 acres of wetlands and 3,581 linear feet of streams, approximately seven acres more than the amount of potential wetland impacts from the Red Corridor Option (8.0 acres).

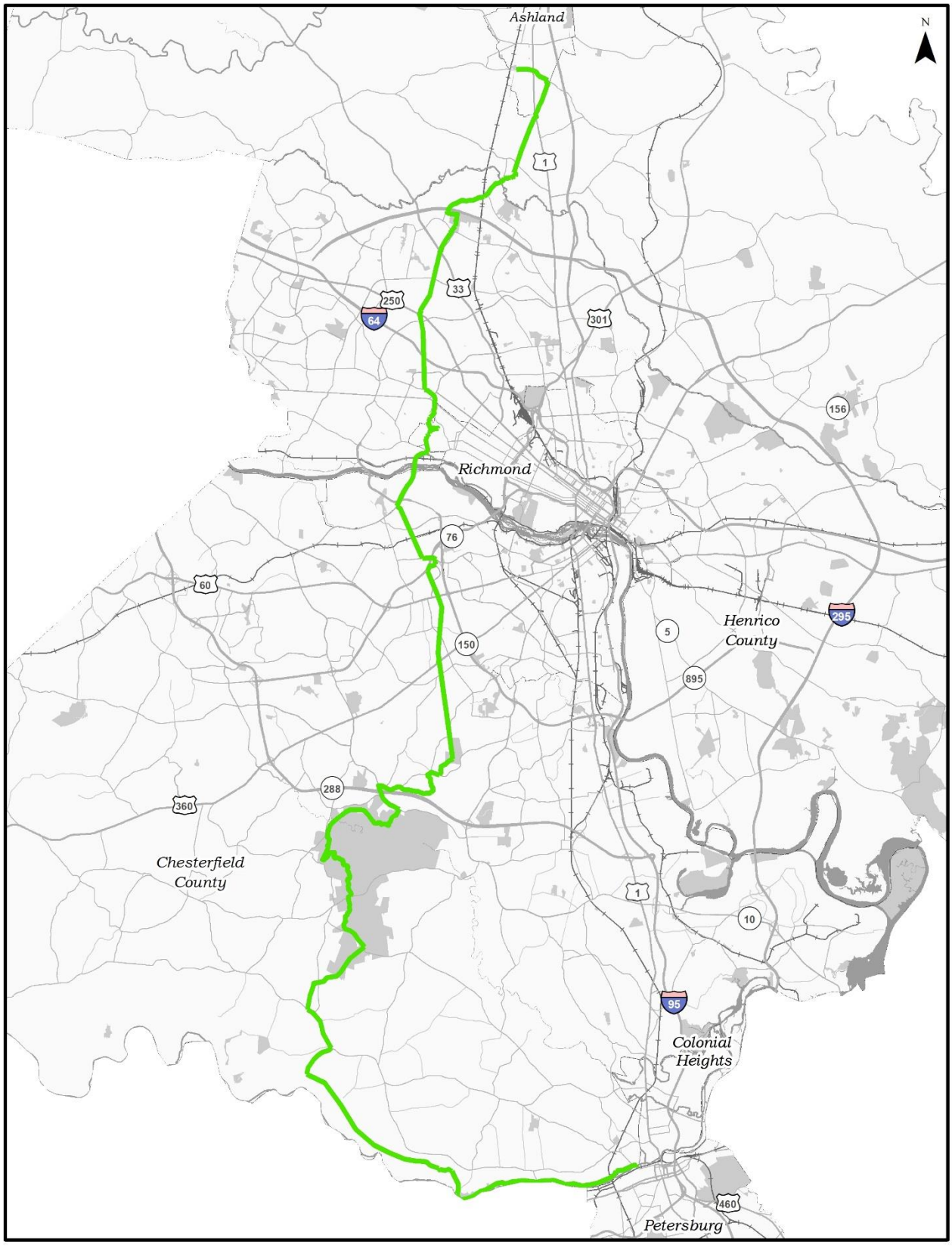
Other Considerations

Upon STAG review of the preliminary corridor options, the STAG members are not in favor of the Green Corridor Option due to it being furthest from populated areas, not connecting to key destinations, and based on previous public coordination outside of this study, is not favored by the public due to potential right of way issues. Additionally, Chesterfield County has concerns with adjacent property owners along the corridor option in southern Chesterfield and the City of Colonial Heights has concerns with the lack of adjacency and connection to the City of Colonial Heights with the Green Corridor Option.

Retained or Not Retained for Detailed Evaluation

Although the Green Corridor Option addresses the overall needs to a degree, it represents one of the more impactful and longest options, which could contribute to a higher overall cost. Given the similarities between this corridor and the others while considering the cost and feasibility of implementation, more practicable and reasonable options are identified that have a lower potential for impacts to wetlands and streams and higher potential to address safety needs identified in VDOT's PSAP. Additionally, during the April 24, 2019 STAG meeting, the STAG recommended that this corridor option not be carried forward as it does not provide desired regional connectivity. Therefore, the Green Corridor Option is not recommended to be retained for detailed evaluation.

Figure 6-6. Green Corridor Option



Blue Corridor Option

Ability to Meet Purpose and Need

Need Element Number 1: Safety

As part of the preliminary evaluation, a level of traffic stress facility meeting the purpose and need and the Need Element Number 1: Safety was assumed to be met for implementation by the six preliminary corridor options; however, it was identified that the Blue Corridor Option would not address safety needs identified in VDOT's PSAP, as the option did not include any portions of priority corridors where primary areas of safety concern were identified.

Need Element Number 2: Connectivity

The Blue Corridor Option would offer connection to 13 destinations of interest identified by the public and STAG within a half-mile of the corridor. **Table 4-1** in **Section 4: Corridor Options Development** represents the destinations of interest within a half-mile along the corridor options.

Need Element Number 3: Consistency

The Blue Corridor Option had approximately 84 percent (44 miles) of its corridor length (approximately 52 miles) comprised of existing or planned active transportation facilities. Local and regional planning documents and GIS data obtained throughout the study process from STAG members was reviewed to evaluate corridor length on existing or planned active transportation facilities. State, regional, and local active transportation planning documents in which existing and proposed bicycle and pedestrian facilities were reviewed and referenced from can be found in **Table 2-7** in **Section 2: Study Purpose**.

Environmental Considerations

The Blue Corridor Option would potentially impact 16.0 acres of wetlands and 4,345 linear feet of streams, approximately double the amount of potential wetland impacts from the Red Corridor Option (8.0 acres) and approximately double the amount of potential stream impacts from the Orange Corridor Option (2,307 linear feet), the corridor option with the least potential stream impacts.

Other Considerations

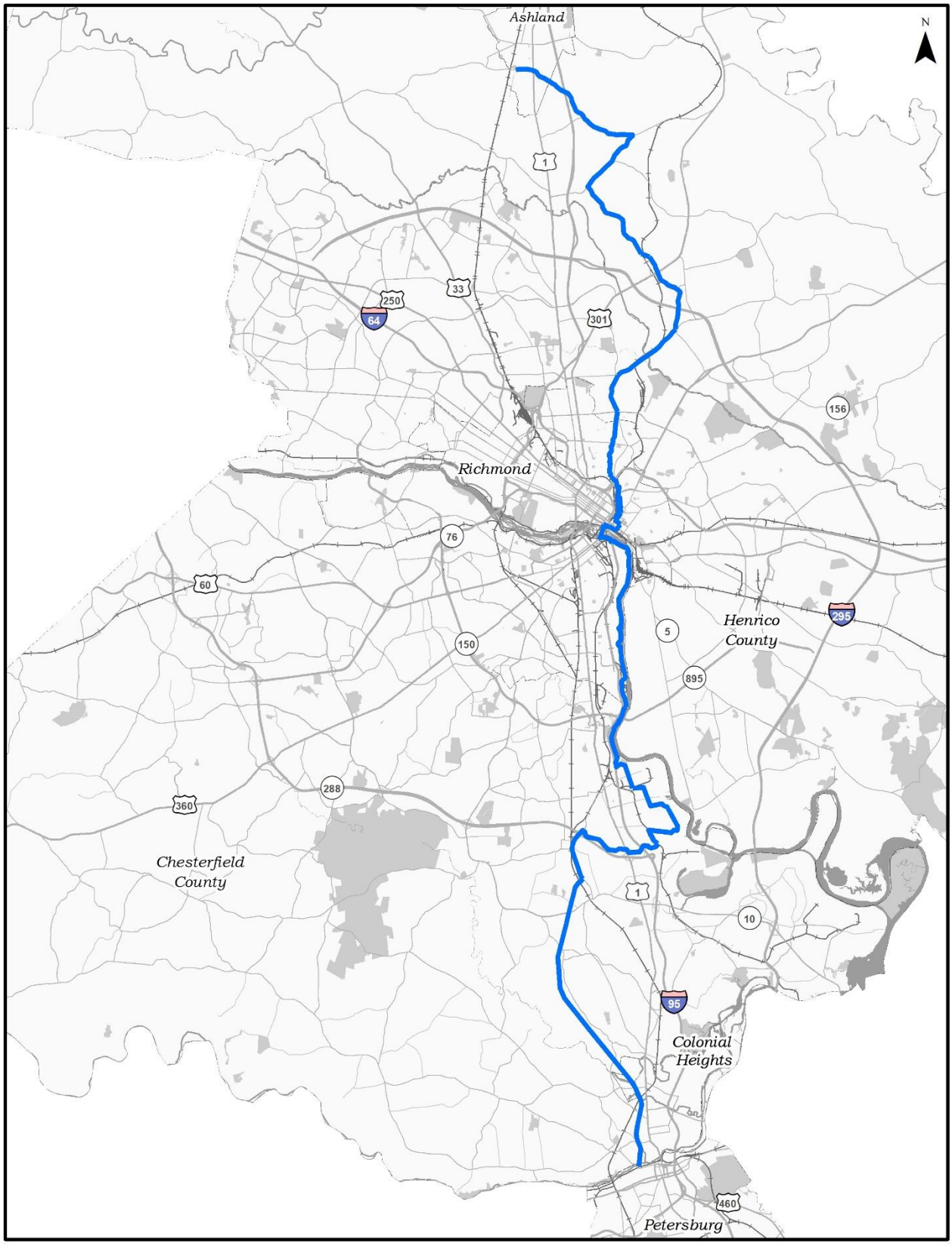
Upon STAG review of the preliminary corridor options, Hanover County notes that the Blue Corridor Option would follow Sliding Hill Road where bicycle lanes were recently implemented. Henrico County has concerns with the Blue Corridor Option along the Richmond Henrico Turnpike due to potential bridging and wetland constraints. Chesterfield County supports the Blue Corridor Option following the Chester Linear Extension rail-to-trail; however, the County anticipates concerns from adjacent property owners where the corridor option is along Route 1. Chesterfield County and FOLAR support the use of the crossing of the Appomattox River adjacent to Campbell's Bridge for a bicycle and pedestrian bridge.

Retained or Not Retained for Detailed Evaluation

Although the Blue Corridor Option addresses the overall needs to a degree, it represents one of the more impactful options. Given the similarities between this corridor and the others while considering logistics of implementation, more practicable and reasonable options are identified that have a lower potential for damaging impacts to wetlands and streams and higher potential to address safety needs identified in VDOT's PSAP. Additionally, opportunities to avoid or minimize impacts to wetlands and streams are expected to be limited, particularly in the vicinity of the Chickahominy River crossing where modifications of Mechanicsville Turnpike (Route 360) would likely be required. Therefore, the Blue Corridor Option is not recommended to be retained for detailed evaluation.

Appomattox River (Petersburg)

Figure 6-7. Blue Corridor Option



Purple Corridor Option

Ability to Meet Purpose and Need

Need Element Number 1: Safety

The Purple Corridor Option included approximately 2.5 miles of priority corridors identified by VDOT's PSAP. The 2.5 miles of priority corridors included portions along Iron Bridge Road in Chesterfield County and Brook Road in the City of Richmond.

Additionally, as part of the preliminary evaluation, when evaluating the corridor option's ability to meet the Need Element Number 1: Safety, a level of traffic stress facility meeting the purpose and need was assumed for implementation.

Need Element Number 2: Connectivity

The Purple Corridor Option offers connections to 17 destinations of interest identified by the public and STAG within a half-mile of the corridor. **Table 4-1** in **Section 4: Corridor Options Development** represents the destinations of interest within a half-mile along the corridor options.

Need Element No. 3: Consistency

The Purple Corridor Option had approximately 85 percent (54 miles) of its corridor length (approximately 63 miles) comprised of existing or planned active transportation facilities. Local and regional planning documents and GIS data obtained throughout the study process from STAG members was reviewed to evaluate corridor length on existing or planned active transportation facilities. State, regional, and local active transportation planning documents in which existing and proposed bicycle and pedestrian facilities were reviewed and referenced from can be found in **Table 2-7** in **Section 2: Study Purpose**.

Environmental Considerations

The Purple Corridor Option had the potential to impact the most streams and wetlands, an estimated 21.1 acres of wetlands and an estimated 9,709 linear feet of stream, more than double the amount of potential wetland impacts from the Red Corridor Option (8.0 acres), the corridor option with the least potential wetland impacts, and more than triple the amount of potential stream impacts from the Orange Corridor Option (2,307 linear feet), the corridor option with the least potential stream impacts.

Other Considerations

Upon STAG review of the preliminary corridor options, the Town of Ashland favors how the Purple Corridor Option follows the Ashland Trolley Line Trail and Henrico County prefers the Purple Corridor Option's entrance into the County through Bryan Park. Additionally, Chesterfield County and FOLAR support the use of the crossing of the Appomattox River adjacent to Campbell's Bridge for a bicycle and pedestrian bridge. However, Chesterfield County has concerns with adjacent property owners along the corridor option in southern Chesterfield and the City of Colonial Heights has concerns with the lack of adjacency and connection to the City of Colonial Heights with the Purple Corridor Option.

Retained or Not Retained for Detailed Evaluation

Although the Purple Corridor Option addresses the overall needs, it represents the most impactful and longest option, which could contribute to a higher overall cost. Given the similarities between this corridor option and the others while considering the cost and feasibility of implementation, more practicable and reasonable options are identified which provide better connectivity and consistency with state, regional, and local transportation plans, while avoiding the potential for impacts to wetlands and streams. Therefore, the Purple Corridor Option is not recommended to be retained for detailed evaluation.

Pocahontas State Park (Chesterfield)

Figure 6-8. Purple Corridor Option